

Lake Indawarra Water Quality

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| LEARNING AREA: Science / Mathematics / English | SUBJECT: Science / Maths / English | YEAR LEVEL:8 |
| TOPIC/UNIT: Lake Indawarra Water Quality | DURATION: 6 weeks | |
| RESOURCES / TEXTS: | | |

| ESSENTIAL LEARNINGS | | | KEY COMPETENCIES | | |
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| F | Futures | ✓✓ | KC1 | Using Information | ✓✓✓ |
| Id | Identity | ✓ | KC2 | Communicating | ✓✓✓ |
| In | Interdependence | ✓✓✓ | KC3 | Planning & Organising | ✓✓✓ |
| T | Thinking | ✓✓✓ | KC4 | Working in Teams | ✓✓✓ |
| C | Communicating | ✓✓ | KC5 | Using Mathematics | ✓ |
| | | | KC6 | Solving Problems | ✓✓ |
| | ICT | ✓✓✓ | KC7 | Using Technology | ✓✓✓ |

| LEARNING AREA/ STRAND | KEY IDEAS | LEARNING OUTCOMES | ACTIVITIES | ASSESSMENT TASKS |
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| SCIENCE: Earth and Space | Students investigate, through fieldwork and research, the central importance of the earth's role in sustaining life and how changes impact on life; and understand the interaction of the atmosphere, the oceans and the earth's surface F, In, T, KC1, KC3 | 4.1 Identifies and investigates changes, both natural and human-induced, on the earth and suggests ideas which encourage the preservation of the natural environment for all living things F, In, T, KC1, KC6 | <ul style="list-style-type: none"> ◆ Pre-investigation activity: ◆ Learn to use the dataloggers (refer Moodle) ◆ Ongoing investigation activities: <ul style="list-style-type: none"> • Collect data from water samples from diff sites • Record data on spreadsheet (lessons may be needed to teach spreadsheets) • Record weather conditions at time of data collection (video if possible) – journal • Keep a record of climatic conditions in area – determine factors to be recorded – journal ◆ Investigate the advantages and disadvantages of developing the aquatic habitats. ◆ Brainstorm factors that could affect water quality at Lake Indawarra or Keith habitat pond (could be from any water body) ◆ Develop an inquiry question relating to water quality | Action Plan Practical activities Presentation and assessment of notebook which includes reflections and actions / experimental method, data collection and analysis etc |
| SCIENCE: Life Systems | Students develop a shared understanding of the characteristics and behaviour of living things and how they are interrelated and interdependent. They appreciate and report on the place of humans in the earth's ecology, and develop their understanding of, explore future possibilities for, and act to contribute to, sustainable environments. F, In, KC1, KC2, KC3 | 4.5 Investigates and explains the functioning of living systems from the microscopic to the macroscopic F, In, KC1, KC2 4.6 Explores how living things have changed over geological time and debates the value of species diversity and the ethics of human intervention. F, T, C, KC2, KC6 | | |

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| <p>MATHEMATICS: Exploring, Analysing and Modelling Data</p> | <p>Students engage with data by formulating and answering questions, and collecting, organising and representing data in order to investigate and understand the world around them.</p> <p>In, T, C, KC2, KC6</p> | <p>4.1 Poses questions, appropriately designs a survey, collects data and classifies sequence, collapses, tabulates and represents the data with and without ICTs</p> <p>In, T, C, KC1, KC2, KC7</p> <p>4.2 Reads and describes information in given tables, diagrams, line and bar graphs. Makes predictions based on the information, understanding the limitations of the data interpretation and the possible social consequences of these limitations.</p> <p>In, T, KC2, KC6</p> | <ul style="list-style-type: none"> ◆ Form group and develop an action plan to research this problem ◆ Formulate an hypothesis ◆ Determine independent and dependent variables ◆ Determine controls ◆ Keep ongoing records of data over an extended period of time (regular testing over years to provide opportunity for comparison), noting weather conditions at time of data collection – journal <ul style="list-style-type: none"> • Describe the impact of variations in weather patterns on the aquatic habitats ◆ Record climatic conditions over a period of time – videos, bureau of meteorology reports etc – discuss how these conditions could be collected and recorded | <p>Science report</p> <p>Communication of findings through students choice</p> |
| <p>ENGLISH: Texts and Contexts</p> <p>Strategies</p> | <p>Students choose and compose a range of written texts which explore different perspectives about local and some global issues. They apply an understanding of context, purpose and audience to their own writing</p> <p>In, T, C, KC2, KC3</p> <p>Students use a range of reading/viewing strategies to research independently and in teams, record specific information and critically interpret increasingly complex</p> <p>F, Id, C, KC1, KC2, KC4</p> | <p>4.3 Reads and views a range of texts containing multiple social and cultural perspectives and examines personal and diverse understandings of the contemporary world.</p> <p>In, T, KC1</p> <p>4.11 Controls, adjusts and compares a variety of strategies for locating and recording information and for reading, viewing and critically interpreting written and visual texts for specific purposes</p> <p>T, C KC1, KC2</p> | <ul style="list-style-type: none"> ◆ Learn how to prepare graphs from tables ◆ Draw line of best fit ◆ Predict changes ◆ Analyse scientific information and procedures ◆ Make conclusions on data and reliability of data ◆ Prepare a scientific report | |